

Abstract of the Disclosure:

A trench capacitor for use in a semiconductor memory cell is formed in a substrate and includes a trench having an upper region and a lower region. An insulation collar is formed in  
5 the upper region of the trench. The lower region of the trench extends through a buried well. A dielectric layer, which is formed from tungsten oxide, serves as a capacitor dielectric. A conductive trench filling, which is filled into the trench, is formed from silicon or a tungsten-containing material such  
10 as tungsten, tungsten silicide or tungsten nitride.

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MB/kc